IN THE CLAIMS

Please cancel claims 5, 18, and 19, and amend claims 1, 6-9, 14, and 20-22 as follows:

1. (CURRENTLY AMENDED) An apparatus for driving a plurality of ion thrusters including at least a first ion thruster and a second ion thruster, comprising:

at least one voltage-regulated power supply, each voltage-regulated power supply for driving a common element in each of the plurality of ion thrusters, the common element in each of the plurality of ion thrusters being coupled together at a common point;

a current sensor of a first neutralizer cathode of the first ion thruster providing a first sensed current;

a second current sensor of a second neutralizer cathode of the second ion thruster providing a second sensed current;

a control circuit for providing a current comparison between the first and second sensed currents; and

a current balance circuit including a bias power supply, coupled to the control circuit, the current balance circuit ~~for~~ providing a substantially balanced current to each neutralizer cathode of the plurality of ion thrusters, and the bias power supply providing a voltage difference to the first neutralizer cathode relative to the second neutralizer cathode based upon the current comparison ~~by providing a voltage to the neutralizer cathodes~~ relative to the common point.

2. (ORIGINAL) The apparatus of claim 1, wherein the at least one voltage-regulated power supply comprises:

a screen power supply for driving each screen of the plurality of ion thrusters; and

an accelerator power supply for driving each accelerator grid of the plurality of ion thrusters.

3. (ORIGINAL) The apparatus of claim 1, further comprising a plurality of current-regulated power supplies each for driving a separate element in each of the plurality of ion thrusters.

4. (ORIGINAL) The apparatus of claim 3, wherein the plurality of current-regulated power supplies comprises:

a plurality of discharge power supplies, each for driving discharged electrons in a separate ion thruster of the plurality of ion thrusters;

a plurality of discharge heater power supplies, each for driving a discharge heater in a separate ion thruster of the plurality of ion thrusters;

a plurality of discharge keeper power supplies, each for maintaining electron discharge in a separate ion thruster of the plurality of ion thrusters;

a plurality of neutralizer heater power supplies, each for driving a neutralizer heater in a separate ion thruster of the plurality of ion thrusters;

a plurality of neutralizer keeper power supplies, each for maintaining current in a neutralizer of a separate ion thruster of the plurality of ion thrusters.

5. (CANCELED)

6. (CURRENTLY AMENDED) The apparatus of claim [[5]] 1, wherein the control circuit determines a sum of the first and second sensed current and provides current comparison so that the first and second current both equal substantially half of the sum.

7. (CURRENTLY AMENDED) The apparatus of claim [[5]] 1, wherein the control circuit provides the current comparison so that the first current and the second current are substantially equal.

8. (CURRENTLY AMENDED) The apparatus of claim [[5]] 1, wherein the voltage difference is in a range from +50V to –50V.

9. (CURRENTLY AMENDED) The apparatus of claim [[5]] 1, wherein the second neutralizer cathode is coupled to ground through a Zener diode to allow the second neutralizer cathode to float at a potential necessary to supply the correct electron emission to neutralize the positive ion beam of thrusters.

10. (ORIGINAL) The apparatus of claim 1, where the current balance circuit comprises:

a plurality of current sensors sensing separate currents to each neutralizer cathode of each ion thruster of the plurality of ion thrusters;

a control circuit for a providing a current comparison between the sensed currents to each neutralizer cathode of each ion thruster of the plurality of ion thrusters;

a bias power supply for each neutralizer cathode coupled to the control circuit to provide a voltage difference between each neutralizer cathode and the common point based on the current comparison to produce a substantially balanced current to each of the neutralizer cathodes.

11. (ORIGINAL) The apparatus of claim 10, wherein the control circuit determines a sum of the separate currents and provides current comparison so that the separate currents equal substantially half of the sum.

12. (ORIGINAL) The apparatus of claim 10, wherein the control circuit provides the current comparison so that the separate currents are substantially equal.

13. (ORIGINAL) The apparatus of claim 10, wherein the voltage difference is in a range from 0V to 50V.

14. (CURRENTLY AMENDED) A method of driving a plurality of ion thrusters including at least a first ion thruster and a second ion thruster,, comprising the steps of:

providing at least one voltage-regulated power supply, each voltage-regulated power supply for driving a common element in each of the plurality of ion thrusters;

providing a plurality of current-regulated power supplies each for driving a separate element in each of the plurality of ion thrusters;

sensing a first current of a first neutralizer cathode of the first ion thruster with a first current sensor;

sensing a second current of a second neutralizer cathode of the second ion thruster with a second current sensor;

comparing the first and second sensed currents with a control circuit to providing a current comparison between the first and second sensed currents;

providing a voltage difference to the first neutralizer cathode relative to the second neutralizer cathode based upon the current comparison;

and

regulating the voltage difference between each neutralizer cathode of the plurality of ion thrusters with a current balance circuit for providing a substantially balanced current to each

neutralizer cathode, wherein the voltage difference is provided with a bias power supply coupled to the control circuit, the control circuit determining a sum of the first and second sensed currents and providing the current comparison so that the first and second currents both equal substantially half of the sum.

15. (ORIGINAL) The method of claim 14, wherein the at least one voltage-regulated power supply comprises:

a screen power supply for driving each screen of the plurality of ion thrusters; and

an accelerator power supply for driving each accelerator grid of the plurality of ion thrusters.

16. (ORIGINAL) The method of claim 14, further comprising providing a plurality of current-regulated power supplies each for driving a separate element in each of the plurality of ion thrusters.

17. (ORIGINAL) The method of claim 16, wherein the plurality of current-regulated power supplies comprises:

a plurality of discharge power supplies, each for driving discharged electrons in a separate ion thruster of the plurality of ion thrusters

a plurality of discharge heater power supplies, each for driving a discharge heater in a separate ion thruster of the plurality of ion thrusters;

a plurality of discharge keeper power supplies, each for maintaining electron discharge in a separate ion thruster of the plurality of ion thrusters;

a plurality of neutralizer heater power supplies, each for driving a neutralizer heater in a separate ion thruster of the plurality of ion thrusters;

a plurality of neutralizer keeper power supplies, each for maintaining current in a neutralizer of a separate ion thruster of the plurality of ion thrusters.

18. (CANCELED)

19. (CANCELED)

20. (CURRENTLY AMENDED) The method of claim [[18]] 14, wherein the control circuit provides the current comparison so that the first current and the second current are substantially equal.

21. (CURRENTLY AMENDED) The method of claim [[18]] 14, wherein the voltage difference is in a range from +50V to –50V.

22. (CURRENTLY AMENDED) The method of claim {[18]] 14, wherein the second neutralizer cathode is coupled to ground through a Zener diode to allow the second neutralizer cathode to float at a potential necessary to supply the correct electron emission to neutralize the positive ion beam of thrusters.

23. (ORIGINAL) The method of claim 14, where the current balance circuit comprises the steps of:

a plurality of current sensors sensing separate currents to each neutralizer cathode of each ion thruster of the plurality of ion thrusters;

a control circuit for a providing a current comparison between the sensed currents to each neutralizer cathode of each ion thruster of the plurality of ion thrusters;

a bias power supply for each neutralizer cathode coupled to the control circuit to provide a voltage difference between each neutralizer cathode and the common point based on the current comparison to produce a substantially balanced current to each of the neutralizer cathodes.

24. (ORIGINAL) The method of claim 23, wherein the control circuit determines a sum of the separate currents and provides current comparison so that the separate currents equal substantially half of the sum.

25. (ORIGINAL) The method of claim 23, wherein the control circuit provides the current comparison so that the separate currents are substantially equal.

26. (ORIGINAL) The method of claim 23, wherein the voltage difference is in a range from 0V to 50V.